

ABSTRACT

An integrated circuit device includes a substrate. Drive circuitry is arranged on the substrate. A plurality of micro-electromechanical devices is positioned on the substrate. Each device includes an elongate actuator having a fixed end that is fast with the substrate so that the actuator is connected to the drive circuitry and a free end that is displaceable along a path relative to the substrate to perform work. The actuator includes a pair of elongate arms that are spaced relative to each other along the path and are connected to each other at each end, with one of the arms being connected to the drive circuitry to define a heating circuit and being of a material that is capable of expansion when heated, such that, when the heating circuit receives an electrical signal from the drive circuitry, that arm expands relative to the other to deform the actuator and thus displace said free end along said path.